

NEW OR LESS KNOWN INDO-AUSTRALIAN NOTODONTIDAE (LEPIDOPTERA)

by

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ABSTRACT

Beschrijving van twintig nieuwe soorten Notodontidae, alsook van de neallotype van *Melagona dentata* Gaede, uit het Indo-Australisch fauna-gebied, in de verzamelingen van het British Museum (Natural History).

Description of twenty new species of Indo-Australian Notodontidae, and of the neallotype of *Melagona dentata* Gaede, in the collections of the British Museum (Natural History).

Most of the species described below were collected in 1937/38 by the professional Dutch collector, the late J. P. A. Kalis, in Celebes, then Netherlands East Indies. Part of Kalis' material was acquired by Lord Rothschild, and is in the collections at Tring, now property of the British Museum (Natural History), London. Some specimens are in the Roepke Collection, now in the Rijksmuseum van Natuurlijke Historie, Leiden, Netherlands; they have been studied by the late Professor W. Roepke who mentioned a few in his "Remarks on new or little known Indomalayan moths" (*Natuurhistorisch Maandblad, Maastricht*, vol. 32 (1943) seq.). I have studied the material preserved at Tring which has remained unidentified and which proved to contain several apparently new species. The remaining descriptions refer to unidentified material in the collections of the British Museum (Natural History), London.

Acknowledgments are due to the Trustees of the British Museum. Mr. D. S. Fletcher, of the same Museum, has been most helpful, as on numerous previous occasions. All of the genital preparations of Celebes species and sketches thereof have been made by Mr. M. Shaffer, British Museum (Natural History). Finally I have to thank the Belgian National Fund for Scientific Research, for financial aid.

Porsica sidaonta sp. nov. (Fig. 9)

Holotype, male. — Antennae pale yellowish brown; palpi pale yellowish variegated with brown, and dark brown above; frons dark brown; thorax above pale straw yellowish with the bases of tegulae browner; pectus and legs pale yellowish; flanks with a brown stripe; legs streaked with brown; basal abdominal crest pale yellowish; the four first abdominal rings pale buff, the rest greyish brown, with pale yellowish edges to the rings; underside yellower; anal tuft brown at base, then pale yellowish. Ground colour of the forewing pale straw yellow, more or less strongly tinged with umber brown, except in the dorsal area of the basal half, and in the terminal area; proximal lines represented by irregularly placed black dots; costa spotted with black; at one third of dorsum, a conspicuous squarish brown patch, preceded and followed by a black lunule; median line rather indistinct, straight; area around the discocellular rather

broadly tinged with darker chocolate brown; discocellular streak dark brown, edged with ground colour; outer line outcurved, running from beyond $3/4$ of costa to $3/4$ of dorsum, double, consisting of small dots proximally, of short arrowheads distally, the latter edged distally with pale yellow, and followed by a conspicuous, very irregularly shaped dark brown band across the wing; terminal area yellow, faintly tinged with brown, with an irregular subterminal row of spots, and a terminal series of deep black spots; cilia concolorous, faintly streaked with brownish. Hindwing with the basal $2/3$ pale yellowish; terminal portion light greyish brown; veins spotted with brown in the pale area; cilia pale brown at the base, then yellowish with brown spots edged with whitish. Length of forewing 26,5 mm.

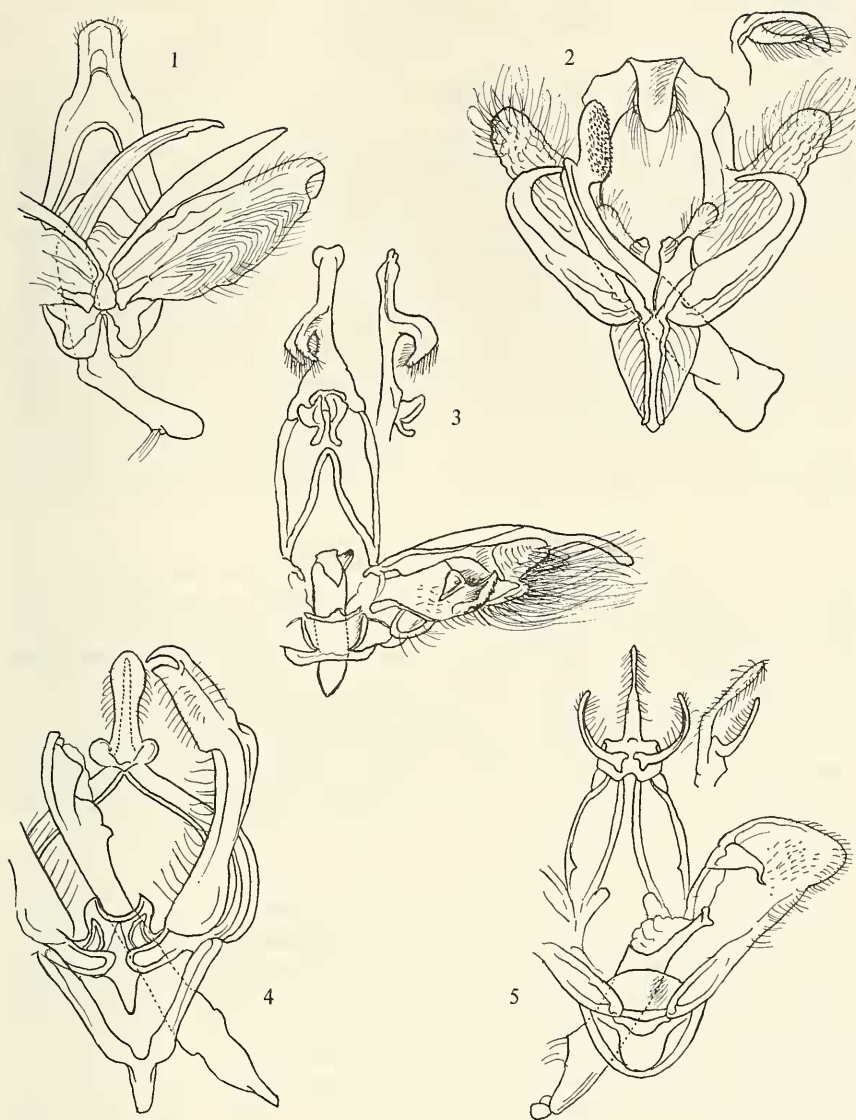
Male genitalia. — Uncus narrow, especially distally, with a small terminal hook. Tegumen narrow. Valva elongate, with the distal portion triangular; valvula and the basal portion of sacculus strongly sclerified, the saccular part ending in a sharp process; margin of sacculus faintly denticulate distally. Aedeagus about $3/5$ of valva, robust, faintly arched; fultura inferior very deeply excised in middle of distal margin, forming two lobes rounded terminally. Saccus hardly developed. Sternal plate of the VIIIth urite semi-circular. The structure described is very much like that in *P. ingens* Walker, in which however, the sclerified basal part of valva ends in two finger-shaped processes of equal length, and the fultura inferior is hardly excised in middle.

Holotype, male: W. Celebes, Paloe District, Sidaonta 4500 ft., VI.1937 (J. P. A. Kalis).

Porsica palua sp. nov. (Fig. 6)

Holotype, male. — Antennae dark grey brown; palpi, head and collar wood brown; occiput paler; tegulae whitish grey; pectus and legs pale brown; forelegs streaked with dark brown; abdomen yellowish grey with a brownish tinge above. Basal area of forewing, to the inner line, pale orange brown streaked with blackish; proximal half of dorsal area strongly suffused with white; a conspicuous black dorsal patch near the distal margin of the basal area; inner line running from $3/7$ of costa to $3/7$ of dorsum, outcurved, consisting of black dots slightly edged with whitish; outer part of wing darker greyish brown with the veins blackish, partly spotted with pale; costal half darker, sepia brown; discocellular spot sepia brown edged with pale umber; outer line pale umber, running from $2/3$ of costa to $3/4$ of dorsum, outcurved; a terminal series of minute black lines on lunules; cilia yellowish with a pale brown subterminal line bearing a series of darker brown dots. Hindwing dirty yellowish, with a greyish discocellular mark; apical area, extending to vein 2, brownish grey; veins slightly darker; terminal line of black lines; cilia pale at base, with yellowish nervural spots, a brownish median line, and pale tips. Length of forewing, 18 mm.

Male genitalia. — Uncus rather broad, semi-elliptical. Tegumen narrow. Valva elongate; distal part broad, spade-shaped; valvula ending in a horn-shaped process, preceded by a small plate bearing a long pilosity. Aedeagus slightly shorter than valva, rather slender; fultura inferior weak. Saccus not developed. Sternal plate of the VIIIth urite narrowing distally, with the terminal margin bearing an excision in the shape of a very blunt angle (about 150°). These structures are rather similar to those observed in *P. curvaria* Hampson.



Figs. 1—5. Male genitalia of Notodontidae. 1, *Micromelalopha montium* sp. n.; 2, *Xenociostera argyrocraspeda* sp. n.; 3, *Omicblis macrospila* sp. n.; 4, *Quadricalcarifera chambae* sp. n.; 5, *Schoutenia bivittata* sp. n.

Holotype, male: W. Celebes, Paloe District, Mt. Tompoe, 2700 ft., II.1937 (J. P. A. Kalis).

Gargetta tompua sp. nov. (Fig. 7)

Holotype, male. — Antennae grey, with the shaft whitish; palpi pale brown, with the last joint darker; head and collar brown; tegulae pale buffish brown at base, then grey edged with creamy; thorax grey brown above and below; legs more yellowish with the inner side brownish; abdomen yellowish brown grey. Forewing with three dentate pale yellowish lines, viz. subbasal, inner and outer; base of the wing and discal field yellowish tinged with rufous brown; space between the subbasal and the inner lines dark brown; terminal space pale yellowish, dark brown in costal area, more brownish before the tornus; all veins blackish spotted with pale, and with black dots on the edges of the lines; of the latter, both proximal strongly dentate, the outer outcurved to vein 1, then angled inwards; terminal line black with white dots on the extremities of veins; cilia buffish with pale brown basal dots at the tips of the veins, and with creamy tips. Hindwing dirty creamy brownish, with the distal third brownish grey; a very obsolete postdiscal pale line; terminal line brownish; cilia with pale tips. Length of forewing, 17 mm.

Male genitalia. — Uncus consisting of two broad, slightly diverging lobes; gnathi short and slender, hairy. Tegumen rather narrow. Valva elongate and broad, with the margins nearly parallel, and with the apex rounded; sacculus bearing at middle a short process. Aedeagus about $2/3$ of valva, rather slender; fultura inferior membranous. Saccus short, rounded. Sternal plate of the VIIIth urite slightly narrower distally, with the terminal margin faintly concave. These structures are much as in *G. costigera* Walker, but that species has pointed arms of the uncus and an arched aedeagus.

Holotype, male: SW. Celebes, Tjamba, near Maros, 1500 ft., II.1938 (J. P. A. Kalis). Paratype, male, a small specimen from the same locality has the dark brown proximal band much reduced, much paler, otherwise not different. Length of forewing 14 mm.

Schoutenia gen. nov.

Antennae of male bipectinate for $6/7$ of their length. Palpi short, upcurved. Hind tibiae with two pairs of spurs. Forewing shaped as in the genus *Phalera*. In the forewing, veins 3 and 4 well separated; 5 from above the middle of discocellular; 6, 10, 7, 8+9 stalked, stalks of 6 and 7 short. In the hindwing, veins 3 and 4 from nearly a point; 5 from above middle of discocellular, latter incurved; 6 and 7 stalked for about $1/7$ of 7; 8 approximated to cell as far as nearly $2/3$ of the latter.

Male genitalia. — Xth tergite cut squarely in front; uncus elongate and narrow, especially in distal half, nearly straight; gnathi simple, slender, arched. Valva broad, with the costal margin strongly convex and with the sacculus nearly straight; costa bearing before middle a strong hook-shaped process. Aedeagus nearly twice as long as the costa, rather robust, nearly straight; distal end produced ventrally; fultura inferior with the distal margin rounded. Saccus broadly rounded. Sternal plate of the VIIIth urite strong, with a rounded excision at middle of the distal margin.

Type-species, *Schoutenia bivittata* sp. nov.

Schoutenia bivittata sp. nov. (Fig. 5)

Holotype, male. — Antennae rufous buff with the basal tuft white mixed with brown; palpi dark brown, with the underside and the tip whitish; gula and periorcular region dark brown; rest of head and thorax above white mixed with brown; collar with a brown median spot; pectus and legs pale buffish; legs streaked with dark brown; abdomen buffish. Forewing whitish; a broad subbasal band of Vandyck brown, directed obliquely outwards, broadening and becoming diffuse towards the dorsum, and edged with dark brown from costa to vein 1; middle portion of costa with brown sprinkling; disc with a few brown scales; outer line dark brown, beginning near the apex, double, broadly incurved from costa to vein 3 where it is sharply angled outwards, becoming simple and incurved from vein 3 to vein 1; a brown shadow on its distal margin, from apex to base of vein 4; a subterminal series of small brown dots; terminal line brown; cilia spotted with brown. Hindwing yellowish at the base; rest suffused with light chocolate rufous; cilia brownish with pale ends. Length of the forewing, 17 mm.

Male genitalia. — See above.

Holotype, male: North Dutch New Guinea, Waigeu Id., Camp Nok, 2500 ft., V.1938 (L. E. Cheesman).

Norraca celebica sp. nov. (Fig. 8)

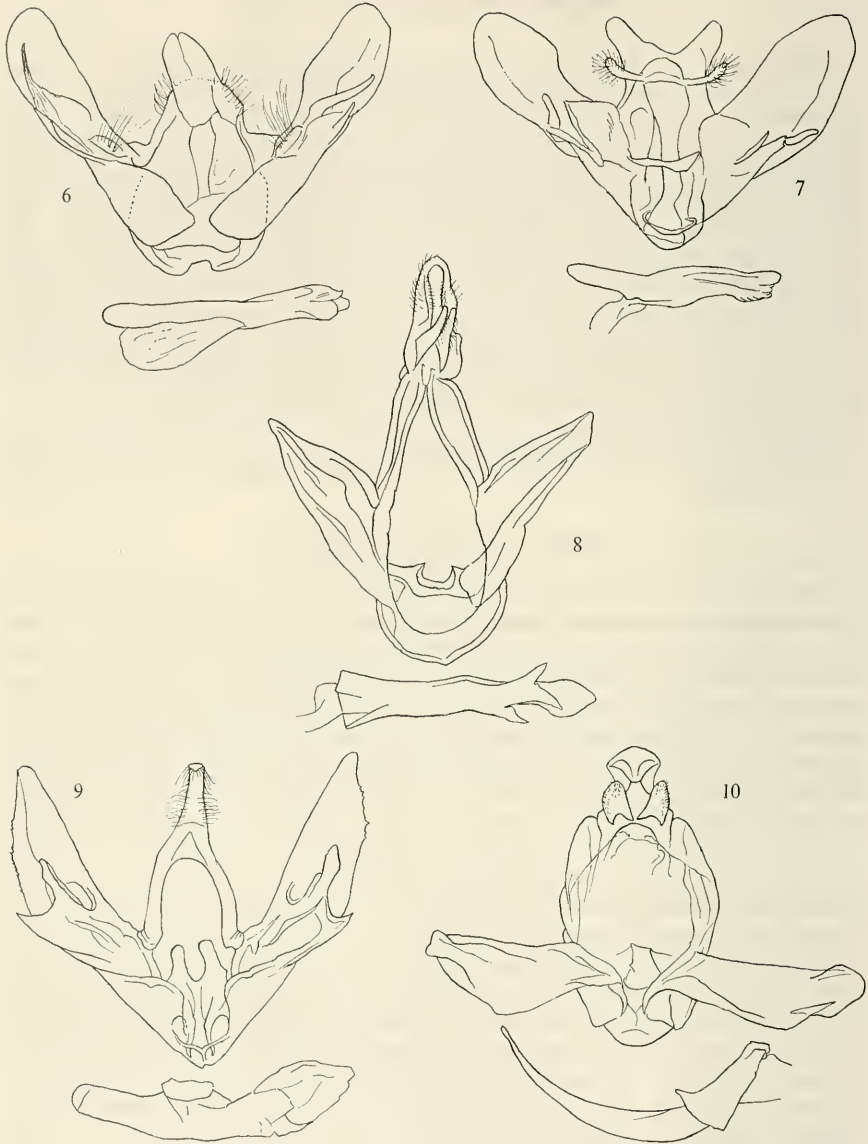
Holotype, male. — Antennae pale brown; palpi brownish creamy; upperside of palpi, frons and periorcular region dark brown; head creamy white with a brown occipital line; collar, inner part of tegulae and middle of thorax suffused with umber brown, with a dark brown median line on collar, joining the brown occipital line; rest of thorax and abdomen creamy; legs tinged with brown above; dorsal abdominal tufts tinged with rufous buff; anal tuft nearly white. Forewing pale creamy yellow, sprinkled with chestnut, except in distal third; dorsal area light chestnut, sending out a subterminal line, parallel with termen and reaching vein 4; a light chestnut streak from base of wing to apex, broadening distally and forming a patch in interval IV and part of interval V; a dark brown dot below cell, another on vein 1 at two thirds of wing; a few basal dots; an external row of brown nervural dots; a subterminal row of internervural dots; cilia concolorous. Hindwing coloured like forewing, but suffused with orange rufous, except in costal area. Length of forewing, 22 mm.

Male genitalia. — Uncus lobe-shaped; gnathi short, rather slender, arched. Tegumen rather narrow. Valva relatively short, tapering distally, without processes. Aedeagus about as long as the valva, rather robust, nearly straight, bearing subterminally two pointed processes; fultura inferior little differentiated; fultura superior produced into a long, rather narrow process, expanded laterally at its distal margin. Saccus not well differentiated. Sternal plate of the VIIIth urite narrowing distally; proximal margin bilobate; a median longitudinal groove, ending in two short processes; tergal plate with the median portion partly membranous.

Not unlike *Ambadra celebensis* (Roepke), but the male genitalia of course different.

Holotype, male: W. Celebes, Mt. Tompoe, Paloe, 2700 ft., I.1937 (J. P. A. Kalis).

In my generic revision of the Indo-Australian Notodontidae (in *Genera Insectorum*, 1968, p. 94) I have mistakenly referred *Turnaca celebensis* Roepke (*Natuurhist. Maandbl. Maastricht*, 32 (1943): 101, fig. 14a, b) to *Suriga suriga* (Schaus). In fact



Figs. 6—10. Male genitalia of Notodontidae. 6, *Porsica palua* sp.n.; 7, *Gargetta tompua* sp.n.; 8, *Norraca celebica* sp.n.; 9, *Porsica sidaonta* sp.n.; 10, *Cerura timorensis* sp.n.

it belongs to the genus *Ambadra* Moore and differs from *A. rafflesi* (Moore) sufficiently to be granted a specific status. The correct name should be accordingly *Ambadra celebensis* (Roepke) comb. nov.

Cerura timorensis sp. nov. (Fig. 10)

Holotype, male. — General coloration silvery white; antennae brown; palpi blackish; prothorax tinged with brownish; metathorax with two brownish grey spots; pectus brown; inside of legs and tarsi blackish brown; abdomen with a double row of greyish spots dorsally, and with a series of partly fused lateral spots. Forewing with a subbasal and an inner oblique line of pale buff, edged rather obscurely on both sides with black lunules; costa spotted with black in proximal half, and also subapically; discocellular mark faint, pale buff with a very indistinct margin of black dots; traces of an oblique double distal line of black dots; an irregular line of dots, running from near apex to tornus, concave between costa and vein 4 where it is angulate, then again concave; cilia with round black spots. Hindwing with brownish veins, spotted with pale buff, the latter colour also appearing in the anal area; underside with a black discocellular mark. Length of forewing 16 mm.

Male genitalia. — Uncus short, rhomboidal; gnathi short and broad. Valva rather narrow at base, broadening distally, but again narrower in the terminal third. Aedeagus longer than the valva, shaped like an elephant's tusk; fultura inferior narrow. Saccus short, rounded. Sternal plate of the VIIIth urite membranous proximally; the strongly sclerified distal third three-pronged, the median prong broader and faintly denticulate terminally; tergal plate much broader, weakly sclerified, with the distal margin produced at the angles and slightly concave at middle.

A distinct species, very much smaller than the other forms from Oceania, and differently marked.

Holotype, male: Suai, Portuguese Timor, 1-7.XII.1912 (E. Wahr).

Cerura australis Scott and *C. multipunctata* Bethune-Baker very probably are conspecific.

Quadricalcarifera eichhorni sp. nov. (Fig. 15)

Holotype, male. — Antennae light rufous brown, palpi buff, with dark brown above; periocular region dark brown; rest of head and collar white, with a few brown hair scales; collar barred with chocolate brown; rest of thorax above chocolate brown mixed with whitish and with greenish; pectus and legs pale chocolate buff; fore tibiae streaked with brown; sides of abdominal crest rufous grey, middle chocolate brown; rest of abdomen chocolate brown above, yellowish brown below. Base of forewing dark brown, sprinkled with light metallic green, and with a large pale yellow blotch occupying the fore half; basal area limited distally by a fine wavy black line; discal area dark brown, especially distally, more or less sprinkled with light green; a pale yellow costal spot cellular and subcellular marks white, very conspicuous; discocellular mark also white, but rather indistinct; outer line not marked, but the dark brown distal part of discal area has its margin incurved between veins 4 and 6 and slightly produced in interval III; terminal area much paler, sprinkled with pale yellowish green; subterminal line very conspicuous, wavy, irregular; termen darker brown; cilia dark brown, with yellowish dots. Hindwing

yellowish; anal area tinged with orange; costal area whitish, barred with brown, the subapical bar very broad and slightly sprinkled with green, and prolonged by a faint brownish postdiscal line; termen brownish; cilia light brown, spotted with yellowish. Length of forewing 22 mm.

Male genitalia. — Uncus relatively broad, especially distally; gnathos distinctly shorter and narrower, especially at base. Tegumen narrow. Valva relatively short, narrow, leaf-shaped. Aedeagus about twice as long as the valva, robust, with the proximal portion spoon-shaped; fultura inferior flatly convex distally. Saccus triangular, with a short, blunt terminal process. Sternal plate of the VIIIth urite with the proximal process short, about one third of the length of the plate; distal margin produced at the angles, concave at middle, with fine denticulations. Nearest to *Q. mediobrunnea* Bethune-Baker, which latter differs in the terminal margin of uncus broadened and excised at middle, valvae produced at tip, aedeagus much more slender distally, angles of the distal margin of the sternal plate not produced.

Holotype, male: New Ireland, I.1924 (A. F. Eichhorn).

Quadricalcarifera uskwara sp. nov. (Fig. 13)

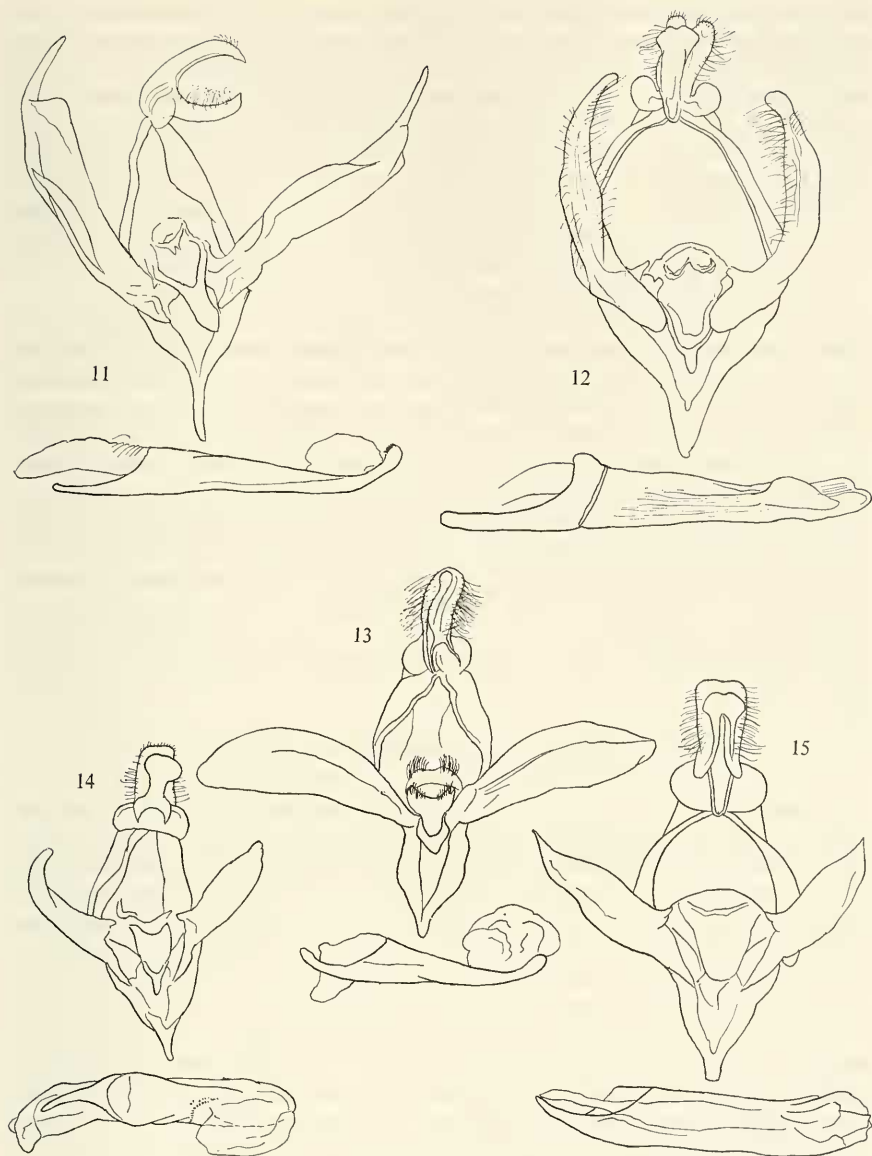
Holotype, male. — Antennae rufous brown; palpi buff, but reddish brown above and on the outer side; head and thorax above chocolate brown, with whitish hair scales; pectus and legs dirty buff; forelegs streaked above with chocolate brown; abdomen grey brown; anal area and anal tuft tinged with reddish; underside dirty buff. Basal area of the forewing yellowish with turquoise scales, and limited by a double black inner line, broken on the media, rather obscurely filled in with green; rest of the wing dark chocolate brown, sparsely sprinkled with turquoise; discocellular mark obsolete; outer line of black lunules, followed by spots, angled inwards in intervals IV and, more strongly, I; terminal area more or less strongly sprinkled with turquoise; subterminal line irregular; cilia dark chocolate brown, with whitish dots. Hindwing dark chocolate grey, pale yellowish at the base; costa very dark chocolate brown with two spots of turquoise; cilia paler at the extremities and with whitish dots. Length of forewing 20.5 mm.

Male genitalia. — Uncus moderately broad, with the sides parallel and the tip rounded; gnathos much narrower, but of about the same length. Valva elongate leaf-shaped. Aedeagus about as long as the valva, spoon-shaped proximally and distally; fultura inferior concave distally; fultura superior narrower and with the middle incision much reduced laterally; both fulturae with well furnished pilosity. Saccus broad, tapering distally to a short process. Sternal plate of the VIIIth urite with the sides more or less parallel; proximal process slender, rather short, curved; distal margin faintly concave. Nearest to *Q. trivialis* Kiriakoff, but the valva has no subterminal fold, the aedeagus is much more slender distally, and the fulturae are hairy.

Holotype, male: Uskwara, Humboldt Bay district, Dutch New Guinea, 1.V.1935 (W. Stüber).

Quadricalcarifera paranga sp. nov. (Fig. 14)

Holotype, male. — Antennae rufous with the basal tuft yellowish; palpi whitish, tinged with rufous on the outer side and brown above; head and collar yellowish, the latter with a subterminal brownish line; thorax yellowish brown above; pectus



Figs. 11—15. Male genitalia of Notodontidae. 11, *Quadricalcarifera alboviridis* sp.n.; 12, *Q. rhypara* sp.n.; 13, *Q. uskwara* sp.n.; 14, *Q. paranga* sp.n.; 15, *Q. eichhorni* sp.n.

and legs paler; gula and inside of forelegs dark chocolate brown; basal abdominal crest brown, paler on edges; abdomen light rufous brown, paler and more yellowish on the underside. Forewing light olive grey; base paler and tinged with yellow, limited distally by the double, oblique inner line; typical markings with rather indistinct whitish edges; outer line double, lunulate, incurved in intervals IV and V, filled in with darker olive grey; costal area sprinkled with metallic green scales around the outer line; a dark olive grey dorsal spot on the distal margin of the outer line; subterminal line fine, irregular; cilia browner, with yellowish spots. Hindwing pale chocolate brown, darker in the anal area; costa yellowish, barred with brown and olive; terminal line brownish; cilia chequered brownish and pale yellowish. Length of forewing 20 mm.

Near *Q. triplagosa* (Rothschild), but much more sprinkled with green scales.

Male genitalia. — Uncus broad, with the sides parallel and the tip hardly convex; gnathos narrow at the base, but much broadened distally, where it is circular-shaped and as broad as the uncus. Valva rather short and narrow, curved distally. Aedeagus nearly twice the length of the valva, robust, produced proximally into a narrow process, and bearing subterminally a few minute cornuti; fultura inferior with the distal margin regularly excised. Saccus very broad, semi-elliptical, with a short, slender terminal process. Sternal plate of the VIIIth urite parallelogram-shaped; proximal process slender, about half the length of the plate; distal sclerified margin produced at the angles, with a small median excision, and minutely denticulate terminally. *Q. triplagosa* has a narrower uncus, broadening and slightly bilobate distally; aedeagus distinctly slenderer distally, and with terminal denticulations; sternal plate of the VIIIth urite with angles not produced.

Holotype, male: S.W. Celebes, Lampobattang, Parang-bobo Goa, 5000 ft., V.1938 (J. P. A. Kalis).

Quadricalcarifera alboviridis sp. nov. (Fig. 11)

Holotype, male. — Antennae with the shaft whitish and the pectinations rufous brown; basal tuft yellowish green; palpi dark brown with the underside whitish; frons whitish; rest of head greyish brown; thorax above greyish brown with a few greenish hair scales; pectus and legs brownish creamy; gula and inside of the forelegs chocolate brown; abdomen greyish brown. Forewing light umber grey; base covered with yellowish scales and limited by the inner line; the latter double, oblique, conspicuously filled in with white; dorsal lunule without the white filling; costal and dorsal area of the wing sprinkled with yellowish green; discal and terminal areas also with scattered green scales; typical markings hardly indicated, with paler margins; outer line also indistinct; subterminal line fine, irregular, formed of M-shaped bars; cilia darker brown, dotted with pale yellowish. Hindwing white; veins and anal area yellowish brown; costa umber grey with green scales and barred with whitish; terminal line yellowish brown; cilia brownish, spotted and terminated with whitish. Length of forewing 19 mm.

Nearest to *Q. viridimargo* Kiriakoff, but much greener and with the base of the forewings white.

Male genitalia. — Uncus narrow, distinctly curved; gnathos shaped about like the uncus, and of about the same length. Tegumen broadening distally. Valva very much elongate, narrow, produced terminally into a finger-shaped process. Aedeagus about the same length as the valva, tapering distally, with the extreme tip slightly bent and bearing

a few short black spinules or cornuti; fultura inferior lance-shaped. Saccus rather short, with the terminal process slender, as long as the broad portion of the saccus. Sternal plate of the VIIIth urite broad, with the sides parallel; proximal process short; the broad sclerified distal margin forming a very blunt angle. *Q. viridimargo* has the uncus and the gnathos very much shorter, and the terminal portion of the aedeagus is differently shaped.

Holotype, male: W. Celebes, Paloe district, Mt. Tompoe, 2700 ft., II.1937 (J. P. A. Kalis).

Quadricalcarifera rhypara sp. nov. (Fig. 12)

Holotype, male. — Antennae brown; palpi deep chocolate brown, with the underside pale orange; head, collar, thorax above and basal abdominal crest dark brown, mixed with pale yellowish hair scales; pectus and legs buff; fore and median legs brown inside; tarsi ringed with chocolate brown and buff; abdomen yellowish brown; sides and anal tuft brown; underside buff. Forewing dark chocolate brown, finely sprinkled with yellowish and with green scales, the latter lacking in the subterminal area; base streaked with deep brownish black and with yellowish; typical markings rather conspicuously edged with pale yellowish; outer line consisting of a series of elongate deep chocolate black spots, running obliquely inwards from near apex to the discocellular; spot in interval III much more distal; rest of the line running approximately at right angle with the dorsum; terminal line fine, irregular; cilia with yellowish streaklets and very narrowly edged with yellowish. Hindwing yellowish; anal area pale orange; terminal area brownish; costa broadly grey brown with a yellowish bar and a large blackish chocolate subapical spot; terminal line and spots on cilia brownish. Length of forewing 19 mm.

Male genitalia. — Uncus broad, especially distally, with the terminal margin slightly bilobate; gnathos distinctly narrower and relatively more strongly broadened distally. Tegumen very narrow. Valva narrow, curved, tapering distally. Aedeagus about twice as long as the valva, very robust proximally, moderately so distally; fultura inferior oval, with the distal margin produced medially and excised laterally. Saccus broadly triangular, with the sides slightly concave. Differs from *Q. mediobrunnea* Bethune-Baker in the absence of a finger-like terminal process of valva and that of pilosity on fultura inferior.

Holotype, male: S.W. Celebes, Tjamba near Maros, 1500 ft., II.1938 (J. P. A. Kalis).

Quadricalcarifera chambae sp. nov. (Fig. 4)

Holotype, male. — Antennae rufous buff; palpi buff, dark brown above; head and collar with mixed black and rufous brown scales; edge of collar narrowly whitish; thorax above blackish brown; pectus and legs buffy grey; basal abdominal crest blackish brown; abdomen orange brown. Forewing chocolate grey; a black basal streak, reaching the inner line; the latter black, double, filled in with whitish, with the proximal element broader, running from $\frac{1}{4}$ of costa obliquely inwards, angled in interval I, then outcurved, reaching the dorsum at $\frac{1}{3}$; a roundish cell spot and discocellular mark whitish, rather indistinct; outer line of rather diffuse black lunules, edged proximally with whitish, running from near apex and incurved to vein 4, then parallel with termen; a series of very indistinct subterminal dark marks; terminal line brown; cilia grey brown.

Hindwing dirty whitish; extremities of veins brownish; costal area brownish grey, barred with whitish; cilia grey brown. Length of forewing 25 mm.

This specimen was labelled in the British Museum as *Stauropus grisea* Hampson.

Male genitalia. — Belongs to the typical group of the genus (*Q. subgeneris* Strand). Uncus relatively very narrow, especially distally, faintly arched; gnathos broad distally and rounded terminally, very slightly longer than the uncus. Valva with both parts fused together, narrow and elongate; costa produced into a lobe; sacculus ending in a hook-shaped process. Aedeagus notably longer than valva, more slender in its middle portion, broadening proximally and distally; fultura inferior sickle-shaped. Saccus very broad proximally, triangular, ending in a short, slender process. Sternal plate of the VIIIth urite with the distal margin deeply excised; proximal process short and broadish; tergal plate slightly excised distally; proximal margin with two short submedian processes.

Holotype, male: Dalhousie (coll. Harford).

Loda gen. nov.

Antennae of male long bipectinate to $\frac{3}{4}$ of shaft; longest pectinations about 7x the breadth of shaft; a fan-shaped basal crest; palpi not reaching the vertex of head, rising, last joint pointed; frons with a knob; hind tibiae with a single pair of spurs; abdomen reaching well beyond the anal angle of hindwings, with a long dorsal and a short ventral anal tuft. Forewing narrow; costa straight to middle, then faintly arched; apex rounded; termen oblique, straight except subapically; tornus very blunt; dorsum straight except at the base. Neuration: vein 2 from $\frac{7}{10}$ of cell; 3 and 4 well separated; 5 from slightly above middle of discocellular; areole absent; vein 6 short stalked with the longer stalk of 10, 7, 8+9. Neuration of the hindwing: vein 2 from $\frac{2}{3}$ of cell; 3 and 4 from a point; 5 from slightly above middle of discocellular; 6 and 7 stalked for slightly less than $\frac{1}{3}$; 8 approximated to cell to near end. Near *Pseudoboplitis* Gaede but vein 6 is stalked with 7—10, and 5 arising only slightly above middle of discocellular.

Male genitalia. — Uncus nearly elliptical; gnathi short, slender, upcurved. Tegumen broad. Valva moderately broad at base, narrowing distally, with the sides of distal half nearly parallel; a strong horn-shaped process at base of costa. Aedeagus shorter than sacculus, rather robust, with a large transverse terminal plate; fultura inferior membranous. Saccus very short, semi-circular. Sternal plate of the VIIIth urite broad, with the proximal margin sclerified and with the distal margin with an excision in the shape of a very blunt angle; tergal plate forming laterally two large lobes. Near the genus *Pseudoboplitis*, which differs in the position and shape of the basal process of valva, in the shape of the valva, and in that of the aedeagus, the latter being fully as long as the sacculus, slender except distally, curved, without any terminal plate; fultura inferior almond-shaped, with small lateral projections.

Type-species: *Loda celebensis* sp. nov.

Loda celebensis sp. nov. (Fig. 19)

Holotype, male. — Antennae brown; basal part of shaft and a large basal crest whitish; palpi and head umber brown; collar, middle of thorax and base of tegulae also umber brown; rest of tegulae very pale brownish, edged with whitish on the inner mar-

gins; pectus rufous buff; legs paler; gula and forelegs tinged with umber brown; basal abdominal crest dark umber brown at middle, silky buffy brown at sides, like the rest of abdomen. Basal area of forewing, limited by the inner line, yellowish, streaked with umber brown and bluish, and becoming Vandyck brown distally; inner line fine, black, outcurved; remainder of wing umber brown, but much darker, nearly sepia brown, in costal area; mark of the discocellular hardly visible, slightly paler; outer line fine, black, strongly dentate, running from $\frac{3}{4}$ of costa to $\frac{3}{4}$ of dorsum, outcurved from costa to vein 3, then incurved; a rather conspicuous distal yellowish white edge on costa, and several yellowish white arrow-shaped marks at the tips of the indentations; costal half of outer area yellowish; costal line dark chocolate brown spotted with yellowish; dorsal half Vandyck brown, merging into the umber brown tinge of the subterminal area, with an irregular, dentate yellowish subterminal line; extreme terminal area becoming bluish grey; veins between the subterminal line and termen, also bluish grey; cilia pale yellowish with brown triangles spotted with white at the extremities of veins. Hindwing pale rufous grey; base yellowish; a very faint postdiscal pale band; veins and terminal line brownish; cilia yellowish, spotted with brownish. Length of forewing 18 mm.

Male genitalia. — See above.

Holotype, male: W. Celebes, Paloe district, Loda, 4000 ft. V.1937 (J. P. A. Kalis).

Omicchlis macrospila sp. nov. (Fig. 3)

Holotype, male. — Antennae with the shaft pale yellowish and the pectinations chocolate brown; palpi pale straw yellow, chocolate brown above; general coloration of body and of forewing pale straw yellow; periphthalmic region, upper side of legs, narrow edge to patagia and tips of tegulae chocolate brown. Markings of forewing fine, brown; subbasal line wavy; inner line broadly so, preceded by black dots on the extremities of the indentations directed basad; a faint shadow across the line; outer line dentate, much approximated to the inner line below vein 2, with a blackish spot connecting both lines in interval I; a dentate median or discal line visible in the costal half of wing, preceded in cell by an orange tinge; no distinct discocellular spot; between outer and subterminal lines a row of black dots; subterminal line of fine lunules; a large umber brown blotch covering most of the costal half of distal area, broader distally, and with its distal outline dentate; terminal line and base of cilia brown; extremities of cilia white. Hindwing yellowish rufous, becoming straw yellow in the anal third; dark spots before the anal angle, as usual in the genus *Omicchlis*; cilia rufous brown, spotted and edged with pale. Length of forewing 17.5 mm.

Male genitalia. — Uncus very elongate and narrow, bearing at middle of its ventral side a large, terminally bifid process; distal edge broadened, somewhat cordiform; gnathi relatively small, broad, compressed, upcurved, with a slender basal process. Valva narrow and elongate, with a slender terminal process; costal fold with a tooth-shaped process at two thirds; the broad and elongate plate of valvula incurved at the distal margin, with ventral denticulations. Aedeagus short and robust, with a small terminal lateral process; fultura inferior cup-shaped. Saccus very short, cut square. Sternal plate of the VIIIth urite rhomboidal. These structures differ from all other structures in the genus *Omicchlis* known to me in the peculiar shape of the uncus, especially its strongly protracted dorsal portion.

The new species is nearest to *O. badromeres* Turner, from which it differs in the very

well defined and conspicuous brown blotch in the outer area of the forewing; the black dot above dorsum is absent; and the male genitalia are very different.

Holotype, male: Nomnagihé, Dutch New Guinea, 25 miles S of Wangaar, 2000 ft., I-II.1921 (C. F. and J. Pratt).

Melagona dentata Gaede

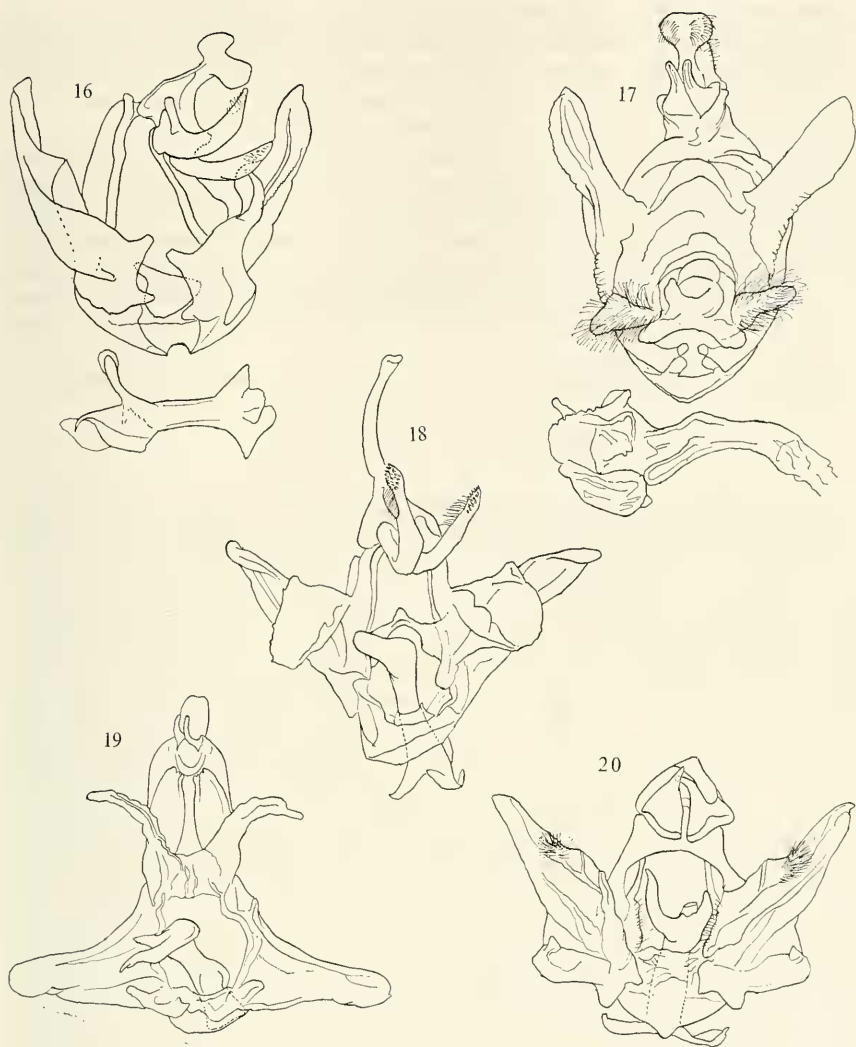
Gaede (in Seitz) has described the female of this species. The male has not yet been described. The male genitalia, however, were described by me in Notodontidae, pars tertia (in Genera Insectorum), p. 208 and fig. 152. Several specimens, both males and females, are in the material collected by Mr. Kalis. Here follows the description of the male, neallotype.

Differs from the female in all colours being brighter. Antennae denticulate. Collar yellowish; basal abdominal crest chocolate brown at the base, then yellowish. Ground colour of the forewing dark chocolate grey; across the wing, an oblique rusty brown band, running from $\frac{1}{3}$ of costa to tornus but not reaching the latter; mark of the discocellular white as in female; middle of dorsum with a square greenish patch, edged proximally and distally by black lines; space between the patch and the oblique band, rufous orange; space beyond the oblique band, from costa to vein 4 and to outer line, greenish; outer line of fine black lunules, with an arrow-shaped streak in interval I; a large subapical costal chocolate-black spot with the veins in it orange; space beyond the outer line, lilac grey; terminal area of ground colour, about 4 mm broad, becoming greenish on termen, and bearing a row of minute black dots; terminal line black; cilia bright umber brown with yellowish basal dots. Hindwing as in female, but the yellowish ground colour clearer, and with the terminal brownish shadow narrower; terminal line brownish, broken; cilia pale brown, dotted with yellowish, and with pale, creamy extremities. Length of forewing 18.5 mm.

Neallotype, male: W. Celebes, Paloe district, Mt. Tompoe, 2700 ft., I.1937 (J. P. A. Kalis). Other specimens: Lindoe, Paloe, W. Celebes, 3700 ft., IV.1937; Loda, Paloe, W. Celebes, 4000 ft., V.1937; female, Sidaonta, Paloe, W. Celebes, 4500 ft., VI.1937 (length of forewing 22 mm) (all J. P. A. Kalis).

Chadisrella celebensis sp. nov. (Fig. 18)

Holotype, male. — Antennae yellowish brown, with the large basal crest pale creamy; palpi whitish, with the upper side dark brown; head and thorax above pale creamy; periocular region dark brown; base of collar ochreous yellow; tegulae tinged with lilac, and with the inner edge dark purplish; metathoracic crest purplish black; pectus and legs pale yellowish; legs streaked with brown; tarsi ringed with brown and creamy; abdomen pale brownish buff; underside and anal tuft more yellowish, the latter mixed with chestnut. Basal area of the forewing, to inner line, greyish lilac, variegated with whitish in the costal part and with brownish yellow in the dorsal part, with an oval white spot, centered with black, in middle dorsal area; inner line double, running from middle of costa to middle of dorsum, angled inwards just below costa, then directed obliquely outwards to the lower angle of cell, where it is angled and directed inwards, and incurved above dorsum; area between inner and outer lines yellow brown with a faint olive tinge; a black discocellular streak; a dentate blackish discal line; outer line double,



Figs. 16—20. Male genitalia of Notodontidae. 16, *Chadisra luzonensis* sp.n.; 17, *Antithemerastis hendersonia* sp.n.; 18, *Chadisrella celebensis* sp.n.; 19, *Loda celebensis* sp.n.; 20, *Sawia vittata* sp.n.

dentate, filled in with whitish, outcurved below the costa, then generally parallel with the termen, rather broadly margined distally with dark grey in dorsal half; apical area from costa to vein 6 white, with dark maroon costal markings, and rejoining the dark grey margin of the outer line; rest of terminal area as the discal area; veins brown distally; subterminal line of black lunules, rather irregular, preceded by some white; terminal line black; cilia yellowish brown with brownish spots and minute white specks

on the extremities of the veins. Hindwing pale brownish white, tinged with light orange in the anal area, and with brownish in the terminal area; veins brown at the extremities; terminal line and anal spot brown, the latter darker proximally; cilia whitish spotted with brown, but becoming brown in the anal area. Length of forewing 17 mm.

Male genitalia. — Tergite of the Xth urite roughly triangular; uncus very long and slender, faintly arched; gnathi long, hooked at first third, and bearing subterminally a number of minute spinules. Valva elongate, rather narrow, bearing subbasally a very large pouch-like fold. Aedeagus distinctly shorter than valva, rather robust, forked proximally, and angled distally; fultura inferior membranous. Sternal plate of the VIIIth urite broad, squarish, bearing two oblique ridges converging proximally. Resembling the structures found in *Ch. javensis* Kiriakoff, which species, however, has a broad valva with a slender terminal process, and a relatively longer and much more slender aedeagus.

Holotype, male: W. Celebes, Paloe district, Mt. Tompoe, 2700 ft., I.1937 (J. P. A. Kalis).

Sawia vittata sp. nov. (Fig. 20)

Holotype, male. — Antennae brown with the denticulations paler; palpi brownish white, but dark brown above; head and collar white with brownish admixture; collar with the base and a subterminal line brown; middle of thorax dark brown, but whitish in front and behind; tegulae dark brown; shoulders whitish; pectus and legs pale yellowish, slightly tinged with brownish; forelegs streaked with brown; tarsi ringed with dark and pale; basal abdominal crest dark brown; abdomen grey brown, paler distally; anal tuft mixed whitish and brown; underside of abdomen pale yellowish. Basal area of the forewing, limited by the inner line, dark brown, slightly variegated with pale yellowish; inner line fine, black, faintly edged with yellowish proximally, beginning at the middle of costa, incurved and directed outwards, then rounded in and below the cell, and running inwards, outwards and again inwards on dorsum which it reaches at about $\frac{2}{5}$; a black discocellular streak, edged with white distally, and touching the inner line; discal field between the lines yellowish with a faint olive tinge, variegated with brownish, and with a rather obscure fine dentate median line; outer line black, sharply dentate, finely edged with whitish distally, running from $\frac{2}{3}$ of costa to $\frac{3}{4}$ of dorsum, on the whole outcurved, but more or less vertical between vein 1 and dorsum; it is followed between vein 4 and dorsum by a series of confluent dark grey spots; a costal subapical dark chocolate brown blotch, faintly streaked with pale; area between the blotch and the series of grey spots, dirty whitish, which colour also forms a distal edge to the grey band; terminal area dark grey brown, with yellowish internervural spots and black dots; terminal line fine, black, broken; cilia spotted with brown and yellowish. Hindwing brownish white, darker towards termen; anal area tinged with yellowish brown; terminal line brownish, broken; anal angle with a brownish spot and short black streak; cilia spotted with brownish and whitish. Length of forewing 19 mm.

Very near *S. undulata* Kiriakoff, from which the new species differs in having no olive tinge on the forewings, and neither the rufous or chocolate brown outer area; the basal area is not pale yellowish.

Male genitalia. — Differ from those of *S. undulata* only in the shape of the gnathi which are distinctly broader, almost triangular.

The general colouration of the species belonging to the *Chadiswa*-group being very

variable, and considering the slight differences of genitalia between *S. undulata* and *S. vittata*, it is possible that the latter is but a geographical race of the former.

Holotype, male: W Celebes, Lindoe Paloe, 3700 ft., IV.1937 (J. P. A. Kalis).

Chadisra luzonensis sp. nov. (Fig. 16)

Holotype, male. — Antennae light brown; palpi brownish creamy, dark brown above; basal tuft of antennae whitish sprinkled with chocolate brown; head and collar umber brown; collar edged with yellowish; thorax above umber brown sprinkled with darker brown; pectus and legs pale brownish buff; legs streaked with brown; basal abdominal crest umber brown; abdomen light greyish umber brown; anal hair mixed with chocolate brown; underside paler. Basal half of forewing yellowish wood brown, finely streaked with chocolate brown in cell; below cell, an oval black dot edged with pale; above dorsum, a short black streak; inner line fine, chocolate black, edged with pale proximally, running from middle of costa, at first oblique outwards and angled at the base of interval III, then becoming wavy and directed obliquely inwards to reach the middle of dorsum; a blackish discocellular streak, edged with whitish; outer line beginning at $\frac{3}{5}$ costa, wavy and indistinct in the costal half, first outcurved, then more distinct, incurved and forming a loop above dorsum; dorsal area between the lines ochreous brown, variegated with brownish; a wavy discal line, edged with whitish, connecting the angle of the inner line in interval III with the outer line on dorsum; costal area distally of outer line pale grey orange, becoming dark umber brown in the median and dorsal areas; the usual blackish subcostal subapical streaks; traces of a pale lunulate subterminal line; a subterminal series of black dots edged with pale ochreous brown, the pale edges reaching the termen; terminal line fine, black; cilia pale rufous, with minute white dots edged with brown. Hindwing pale yellowish brown, becoming grey brown in the outer third; terminal line brownish; anal marking dark brown with a whitish streak; cilia brownish white, spotted with pale, spots edged with brown. Length of forewing 17 mm.

Male genitalia. — Uncus narrow, terminating in two broad lobes; gnathi very robust, sickle-shaped, nearly as long as the uncus. Valva shaped as in *Ch. bipars* Walker. Aedeagus shorter than valva, moderately robust, straight, broadened and lobate proximally, bearing a strong spade-shaped subterminal process; distal margin produced into a slender spike-shaped process; futura inferior nearly semi-circular. Saccus very short. Sternal plate of the VIIIth urite consisting of two oval plates fused together medially. Very near to *Ch. bipars*. In the latter species the lobes of the uncus are narrower; the gnathos very much shorter and quite slender; the aedeagus with the distal extremity slightly broadened, with a small lateral subterminal spine; the sternal plate shaped as a transverse oval with two angular processes on the distal margin.

Specimens from Indonesia referred with doubt to *Ch. bipars* by Kiriakoff (*Bull. Inst. roy. Sci. nat. Belg.*, 36, No. 17:5) belong to *Ch. luzonensis*. *Ch. bipars* seems to be restricted to India.

Holotype, male: Philippine Is., Santa Ana, Manila, 17.VIII.1912 (A. E. Wileman).

Antithemerastis hendersonia sp. nov. (Fig. 17)

Holotype, male. — Antennae pale yellowish brown; palpi pale brown below, dark brown above; head and collar pale brown; collar spotted with brown; tegulae dark

chocolate brown, with pale brown bases; thorax above dark brown at middle, pale brown in front and behind; pectus and legs pale yellowish; legs streaked with pale brown; abdomen pale brown (coffee-and-milk); last two segments and underside pale yellowish; anal tuft variegated with pale brown. Basal half of forewing dark rufous brown, with its distal outline running from $\frac{2}{5}$ of costa obliquely outwards to near tornus, and enclosing a large pale brownish dorsal area; inner line double, distinct in dorsal area only; a double discocellular streak; outer line pale, dentate, edged with dark brown proximally; area beyond, paler reddish grey, becoming light umber brown on margin; two subcostal dark rufous brown streaks; two rather indistinct series of subterminal black dots; cilia brownish, spotted with paler. Hindwing yellowish, tinged with pale yellow orange in the anal area; terminal line pale brown; anal marking dark reddish brown with a yellowish line; cilia as in forewing. Length of forewing 20 mm.

Male genitalia. — Uncus rather broad, with a ventro-terminal rounded lobe; gnathi short, very broad at the base, rather slender and horn-shaped distally. Valva short, rather narrow, with parallel margins, placed rather distally. Aedeagus much longer than the valva, moderately robust, faintly arched; terminal portion very much swollen; fultura inferior broad, with proximal angles produced; labides large, with long pilosity. Saccus short, rounded. Sternal plate of the VIIIth urite with the proximal part concave at the middle, with the angles produced; distal part broadening to form two strong, acute, triangular, diverging processes, dentate on their inner margin. This new species differs from *A. acrobela* Turner in the shape of the aedeagus and of the sternal plate. The former has in the latter species two strongly diverging basal processes; the sternal plate is much less elaborate, with the terminal part broadly excised at the middle, and forming laterally two short, broad lobes, without any trace of denticulations.

Allotype, female. — Larger. Thorax darker brown. Forewing with the distal part paler beyond the outer line. Hindwing suffused with brown in the distal third. Length of forewing 23 mm. A paratype has the basal part of forewing pale rufous yellowish; inner line complete, broadly edged with rufous brown proximally, shaped as in most species of the *Chadisra*-group. Length of forewing 23 mm.

Holotype, male, and allotype, female: Guadalcanal, V.1901 (A. S. Meek). Paratype, female: Rendova Id., II.1904 (A. S. Meek).

Micromelalopha montium sp. nov. (Fig. 1)

Holotype, male. — Head and thorax chestnut grey. Forewing chestnut grey, becoming slightly greyer in the outer area; lines pale greyish, edged on both sides by darker grey; subbasal and inner lines wavy; median and anal veins paler in the basal area, connecting both lines; a dark dot on the discocellular; a wavy discal line of nearly pure chestnut colour, broadening towards the dorsum; outer line slightly more distal in interval III; subterminal line parallel with the outer line, without proximal darker edging; cilia grey brown, spotted with white. Hindwing paler greyish rufous, with a pale wavy post-discal line; a subanal line of dark chestnut, with a white dot near its extremity; anal angle much darker than the rest of wing, chestnut grey like the forewing; cilia pale at the tips. Length of forewing 12 mm.

Male genitalia. — Uncus simple, squarish, with a median hyaline patch. Valva with a narrow costal and a broad membranous median part. Aedeagus notably longer than the valva, sickle-shaped, tapering distally. Saccus consisting of two broad lobes. Sternal

plate of the VIIIth urite shaped as in the genus *Quadricalcarifera* Strand, but with a very short proximal process. Differs as follows from *M. undulata* Hampson: Uncus squarish; basal process of the valva broader, somewhat leaf-shaped; aedeagus much longer than, not as long as, the costa.

Holotype, male: Dalhousie, VI.1891 (Harford coll.). A note in W.H.T. Tams' hand, attached to the specimen, reads: „Himalayan spec., apparently not *undulata*”.

Xenoclostera gen. nov.

Differs from the genera *Clostera* Samouelle and *Micromelalopha* Nagano in its very distinctive male genital structures. Tergite of the Xth urite broad; uncus rather narrow, faintly bent, rounded terminally; gnathi plain, faintly arched, with very long pilosity. Tegumen narrow. Valva with the costal part ending in a rather elongate membranous lobe; sacculus strongly sclerified, broadish, ending in a robust, strongly curved, horn-shaped process. Aedeagus much longer than the valva, robust, with a large subterminal lobe covered with minute spinules or cornuti; fultura inferior deeply cleft in middle, bearing laterally lobe-shaped, hairy labides. Saccus well produced, elongate-triangular. Plates of the VIIIth urite not differentiated.

Type species of the genus: *Xenoclostera argyrocraspeda* sp. nov.

Xenoclostera argyrocraspeda sp. nov. (Fig. 2)

Holotype, male. — Antennae grey brown; palpi blackish; occiput and a median band on collar and thorax velvety blackish chocolate; rest of thorax above very dark chocolate grey; pectus and legs only slightly lighter; fore and median tibiae streaked with dark ferruginous; abdomen umber grey. Forewing very dark chocolate grey; markings quite obsolete; three silvery grey subterminal lunules below apex; costal line and ends of cilia grey. Hindwing umber grey; cilia darker with a whitish edge. Length of forewing 17 mm.

Male genitalia. — See above.

Holotype, male: Maskelyia, Ceylon, III.